

MARINE REVIEW.

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No. 22.

Rudders of Lake and Sea-Going Vessels.

It is strange that shipbuilders and owners on the coast still hold to the pintle or ship rudder, instead of adapting the balance rudder now so generally in use on the lakes. Capt. Henry, whose early experience in navigation was gained on salt water required these rudders on the big steel boats recently built for his company but there are few other lake steamers that have them. It is, of course, admitted that the balance rudder can be handled more readily than the sea-going rudder, fitted closely and strapped to the rudder post. "The only reason I can give for this difference between the rudders used on lake steamers and those of the coast," said a prominent Cleveland builder, "is our advancement in this matter, gained by experience in shallow and narrow places. Spring one of these pintle rudders a sixteenth of an inch out of the way and they are locked. It is not so with our rudders, however, as the weight of the rudder is on the deck fastening and a vessel will steer with the pintle removed from the shoe. The William Chisholm ran a whole season with her rudder entirely removed from the shoe and it was not noticed until she went to the shipyard for other repairs. The rudder was found to be a little out of line and an examination showed that it was not fastened at all at the bottom."

The Atlantic coast light-house tenders Lilac and Columbine, building at the yard of the Globe Iron Works Company, will have the sea-going style of rudder, but it is probable that the Amaranth, the light-house supply boat which the Cleveland Ship Building Company is about to build for service in the lake districts over which Col. William Ludlow has supervision, will have the balance rudder used on the lakes. The boats being built by the Globe company for the Atlantic will have a water bottom all around and a cofferdam above the water bottom. They will also have surface condensers, circulating pumps, etc.

Business Crowded to the Latter End of the Season.

Now that the iron ore companies have sold a large portion of their product for the present season and the idle furnaces are going into blast, there is assurance of a far more active lake trade than was expected a short time ago. The strike of ore handlers at Lake Erie ports is alone in the way of a fair movement in ore, but this difficulty will in all probability be settled in a few days. The labor troubles have been the cause of shortening a season of navigation that would have been strained by ore being brought down in advance of a market for it, and June 1 is at hand with scarcely two dozen cargoes of ore unloaded at lower Lake Erie docks. Full two months of navigation have been lost and it is the general opinion that freights for the latter half of the season must improve, notwithstanding the present depression. Such a result will surely attend a late movement in grain if crops prove plentiful. The coal trade will contribute more than its share to this improvement, as evidenced by the early demand for tonnage at fair rates. At all upper lake ports supplies of both hard and soft coal are still short on account of the late opening, and shipments will surpass all previous seasons if down bound cargoes can be found at only reasonable figures. In the Pittsburgh district the output of bituminous coal is unusually heavy, and the lake shippers, who have fixed prices at the figures of a year ago, \$2.25 for three-quarter inch and \$2.35 for inch and a half screen, free aboard vessels, would increase shipments if the vessels were to be had.

In addition to this delay of two months in the opening, there are other features in the general trade that will tend to crowd all business into the latter part of the season. The refusal of engineers to accept lower wages has been overcome by the vessel owners but there is still prospect of more delay at the ore shipping ports, if an attempt is made to carry out a reduction in charges for trimming as proposed. Such vessels as have already loaded have paid last year's charges for trimming and the laborers will resist any reduction, but there is still a disposition to reduce this cost when other matters are out of the way. The greatest delay, however, that should not be lost sight of, is the disposition on the part of the vessel owners to take matters easy when freights are low. Unlike the merchant, the vessel owner does not seek to increase business on low margins. Boats have been allowed to remain at the dock several days after being ready to go into commission, in order to save insurance, and there will be no rush for night or Sunday work. These incidental delays amounting to a trip for every craft will cut an important figure in the season's business, as it can hardly be said that all of the idleness has been discounted by the depression in trade.

Big Coal Cargoes.

Two steel boats built by the Cleveland Ship Building Company and a third built by the Detroit Dry Dock Company took out big cargoes of coal during the past week. The W. H. Gilcher, of Cleveland, took 2,984 tons, or 3,200 tons including fuel, to Milwaukee, drawing even 15 feet. The Western Reserve, also of Cleveland, is now at the head of Lake Superior with 2,600 tons of cargo, and the E. C. Pope is on the way up with 2,904 tons. The two latter boats were compelled to take light cargoes, on account of the low draft through the Sault canal. The Pope, which will undoubtedly prove the largest carrier on the lakes, had about 3,000 tons including fuel and was drawing but 13 feet 9 inches forward and 14 feet 1 inch aft, or a mean draft of 13 feet and 11 inches.

Mr. H. M. Hanna's Steel Steam Yacht.

The Globe Iron Works Company has finally finished plans for the steel steam yacht to be built for Mr. H. M. Hanna, president of the company. When the keel for this yacht is laid the two metal yards in Cleveland will have under construction two of the finest and most expensive yachts in the country, the Cleveland Ship Building Company having work already well advanced on the boat for Mr. J. H. Wade, Jr. Mr. Hanna's yacht, although costing about \$100,000, will not be a flyer, the plans calling for a boat with plenty of room, elegance and comfort. She will be 185 feet over all, 25 feet beam and 14 feet deep, and her triple expansion engines will have cylinders 14, 23 and 36 inches by 24 inches stroke, with a boiler 12 feet in diameter and 9 feet long. She will carry sail, having two spars with square rig forward.

Side Lights on Schooners and Tow Barges.

There is an increasing demand on the lakes for a law regulating the location of side lights on schooners and tow barges, on account of the danger and collision through the prevailing practice on sailing vessels of placing the lights on all parts of the sides. On some vessels these lights are placed on the vessel's bow, while on others they may be found on the forward, main or mizzen rigging, and in not a few cases on the quarter aft. This matter is regulated on steam vessels and it is highly important that sail vessels should be made to adopt a uniform method also.

The Freight Situation.

Sales of ore for next season's delivery have certainly reached an aggregate of 3,000,000 tons and the estimates of some agents are even higher than this figure. The ore dealers seem to have made up their minds to sell ore, and last year's prices are in some cases cut more than \$1.25 a ton, the limit of concessions made in early sales. Pickands, Mather & Co., representing the Minnesota and Chandler mines, E. C. Pope, representing the Norrie, and Corrigan, Ives & Co., agents for some of the non-Bessemer mines, have made large sales. The amount of ore as yet covered by contract with vessels outside of the regular carriers owned by the mining companies is very light. Such contracts do not aggregate more than 600,000 tons, and the rates so far made from Ashland, Two Harbors and Marquette are 90 cents to Oct. 1 and \$1 for the entire season. Nothing has been heard as yet of a contract rate from Escanaba.

On wild cargoes ore rates are 90 cents from Ashland and Two Harbors, 80 cents from Marquette and 55 cents from Escanaba. There are few loads offering at these figures but it is expected that a settlement of the ore handlers' strike will cause a more active movement. Coal freights are steady and active at 50 cents to the head of Lake Superior, 60 cents to Milwaukee, 50 cents to Escanaba, 60 cents to Green Bay, 55 cents to Portage, 45 cents to Bay City, 35 cents to St. Clair river points and 27½ to 30 cents to Detroit. The rate on coal to Chicago, 60 cents, must advance on account of the light grain movement. The shortage of return cargoes on Lake Michigan will also insure good rates on coal to Milwaukee. Ashland lumber shippers are paying only \$2.00 to Chicago and \$2.12½ to Buffalo. There is an improvement in grain receipts at the head of the lakes but it is consigned to one shipper and will probably be carried by the McDougall barges. The Ward line boats took some wheat at Duluth a few days ago at 1¼ cents but it has not been learned that any vessels have as yet accepted the offer of 1 cent freight.

Pittsburgh and Lake Erie Ship Canal Scheme.

The Iron Trade Review takes exception in a very friendly way to the attitude of this journal toward the Pittsburgh and Lake Erie ship canal scheme. We are accused of pronouncing the scheme unfeasible, a "humbug," etc., without publishing the news concerning it; of intimating that "such reputable gentlemen as Messrs. John A. Wood, of Pittsburgh, W. S. Shallenberger, of Rochester, Eben Brewer, of Erie, John M. Goodwin, of Sharpsville and Thomas P. Roberts, of Pittsburgh, are aiding and abetting the great state of Pennsylvania in the perpetration of a John Law scheme upon the people." The term "humbug" was not attributed to the canal by the MARINE REVIEW. It was used by Mr. M. A. Hanna, president of the Chapin and other iron mining companies, controlling owner of the big steel ore and coal carriers of the Menominee and Mutual transportation companies, vice-president of the Globe Iron Works Company and a member of the firm of M. A. Hanna & Co., shippers of coal and ore. Mr. Hanna is certainly in a position to express a practical and unbiased opinion on a project of the kind proposed. The word "humbug" may have been used by him hastily, but it only goes to show with what regard the agitation attending this subject is considered by men who are actively engaged in transportation business on the lakes, and who are not opposed to progress, as their advancement during the past five years has been a cause of amazement to the entire country. Honesty of purpose may attend every act on the part of the promoters of the proposed canal, but they are not rightly informed regarding lake vessels and the dispatch attending their movements, which is unequalled by anything in the world. But the Iron Trade Review's criticism is on account of our not giving publicity to the reports of the engineers who were appointed to consider the feasibility and advisability of building the canal. We must admit that

there is a great deal of data in the report of Mr. J. M. Goodwin, who made investigations regarding lake floating property, that is interesting as an argument in favor of the whole scheme, but it is not interesting to our readers from a news standpoint, and space can not be given to it. The report deals with a class of boats that is fast being removed from the lake marine, and, even were this not so, there are other good reasons why the canal project is pronounced impracticable at first thought by those who are well informed. The canal must be constructed to the furnaces or the furnaces brought to the canal. How are either of these conditions to be overcome, so as to reduce the extra cost of handling. It is only necessary to consider the delays of any canal in connection with the work of the big steel carriers of the Minnesota Iron Company, any of which are capable of making during a season twenty-eight trips between Lake Superior and Lake Erie, a distance of about 2,000 miles, and carrying 64,000 tons of ore in that number of trips at a lake freight of \$1 a ton. This is the class of craft that will engage in the ore and coal trade of the lakes in future. The days of tows have gone by. The lakes own more steam vessels of 1,500 to 2,500 tons than the combined ownership of this class of vessels in all other parts of the country. This class of fast steam tonnage is used in the ore and coal trade of the lakes. Canal vessels can not compete for the business.

In General.

The steamer C. B. Lockwood, Mr. B. L. Pennington managing owner, carried down 80,000 bushels of wheat from Duluth on her last trip, drawing only 14 feet 3 inches.

The steamship North Wind, one of the Great Northern Railway boats, loaded 22,000 barrels of flour and 240 tons of copper matte in thirteen hours at West Superior, Monday.

Ernest Jansan, of Washington, D. C., is superintending for the government the work of construction on the two light-house tenders being built by the Globe Iron Works Company, Cleveland.

There was 2,553,468 bushels of wheat in store at Duluth on Saturday last, against 3,426,502 bushels at the corresponding time a year ago. Saturday's stocks represented a gain of 30,647 bushels over the previous week.

Masters of several big boats loading grain at Chicago have trimmed the cargoes with their own crews and others have employed colored men who do the work at 75 cents per 1,000 bushels as against \$1 charged by the union.

The American Steel Barge Company's eighteen barges are said to have capacity in net tons of 50,600. The figures seem a little high but the fleet when in commission this season will certainly be the largest in the country. The great bulk of this tonnage will be engaged on the lakes.

"Building of the Steamship in America" is the title of an article by Horace See, E. and N. A., New York, in the third number of The Engineering Magazine. The magazine, published monthly from the World Building, New York, is already favored by contributors of high standing.

After taking up 2,340 tons of coal and returning to Buffalo with 82,000 bushels of wheat the captain of the big propeller John Owen said he would be \$240 ahead on the trip if the grain did not run short. Another big boat, the Panther, is said to have cleared just \$1 on a grain trip. If the grain had not weighed out all right the boat would have come out behind.

To the aggregate of 14,096,427 gross tons of iron ore produced in the United States in 1889 the Lake Superior region contributed 7,292,754 tons, or more than half. This country's product was 26.3 per cent. of the world's production, the figures for Great Britain and Germany bring 14,546,105 tons and 11,001,042 tons respectively. The figures for 1890 will undoubtedly show that the United States leads the world in production of ore.

An improvement in the manner of mounting ships side lights has secured the approval of the English board of trade. It consists of a gimbal fastened to a light screen. When the vessel heels, the lamp swings vertically by means of this arrangement, throwing a horizontal ray even when the vessel is heeled 45 degrees. Board of trade regulations specify that lights must be visible at a distance of two miles.

Finishing Ship Yard Work.

At nearly all of the ship yards around the lakes something is being done in the way of small craft, but another month will find empty berths where big freight carriers have occupied the stocks for five years past. The government boats, under way in Cleveland and Toledo, will constitute the only work of importance on the entire chain of lakes, and the cost of all six of these is barley equal to that of one steel ore carrier.

H. D. Root, of Lorain, is building a fishing tug for E. R. Edson, of Cleveland. The boat will be 60 feet long, 13½ beam and 6 feet moulded depth, and will have a high pressure engine, 12 x 12, built by Clough & Witt, of Cleveland, and a boiler 5 x 9 feet, built by D. Connelly & Co., of Cleveland. The Detroit, Belle Isle and Windsor Ferry Company has closed a contract with the Detroit Dry Dock Company for a ferry boat to cost \$60,000, and Miller Bros., of Chicago, will build an excursion steamer for Capt. Brown, of that port, who anticipates a big excursion business during the World's Columbian Exposition. Carlin, Stickney & Cram, the dredging contractors, are also said to have made arrangements for a tug 100 feet long, to be built by Wheeler & Co., of West Bay City.

Buffalo turned out two steel tugs last week that have been accepted by the owners. One, the Keystone, built by David Bell for the Ashland Lumber Company, is 90 feet long and an exceptionally powerful boat. The second boat, named Frank W. for her owners, Fletcher & Gilchrist, of Alpena, whose given names happen to be the same, was built by the Union Dry Dock Company and cost \$19,000. She is said to be the finest steel tug on the lakes.

The Wolf & Davidson Dry Dock Company, of Milwaukee, has also begun work on a tug. The craft will be 60 feet long over all, with 14 feet beam and 6 feet hold. Her engine, a 14x16, is being built by the Sheriffs Manufacturing Company. The boiler will be 5½ feet in diameter by 10 feet long. The Milwaukee ship yard managers have a strike on hand, the shipcarpenters and caulkers demanding eight hours work and \$2.50 a day. "If you had waited just one week, boys, I would have gone on a strike with you," Mr. Wolf said when the committee from the men informed him of their demands.

At the yard of the American Steel Barge Company, West Superior, the whaleback steamer Chas. W. Wetmore, intended for the Pacific coast trade, was launched Saturday. She was built to go down the Welland canal and St. Lawrence river and is 20 feet shorter than the Colgate Hoyt.

Inland Lloyd's Supplement.

The Inland Lloyd's supplement for June contains the names of twelve new vessels of 7,392 net tons and valued at \$697,500. Valuations and ratings are advanced on about seventy-five boats that were reduced to very low figures in the register. The new boats are:

	Net tonnage.	Valuation.
Crescent.....	50	\$ 7,500
F. & P. M. No. 5.....	1,200	105,000
Fletcher, F. W.....	314	46,000
Iosco.....	1,700	125,000
Lilly.....	79	10,000
Pope, E. C.....	*1,910	210,000
Sauber, W. F.....	1,700	125,000
Keystone.....	48	22,000
Roy.....	*20	5,000
Warren, H. J.....	17	7,000
Frank W.....	47	20,000
†Comstock, J. B.....	307	15,000
	7,392	\$697,500

†Sail vessel. *Estimated.

Official Numbers and Tonnage.

The following numbers were assigned lake vessels by the Bureau of Navigation, W. W. Bates, commissioner, during the week ending May 24: Sail—Caroline, Milwaukee, tonnage, gross 29.51, net 28.04, No. 126,737. Steam—Atlanta, Milwaukee, tonnage, gross 1,129.17, net 958.06, No. 106,823; City of Toledo, Toledo, tonnage, gross 1,003.88, net 654.11, No. 126,738; Island Belle, Buffalo, tonnage, gross 153.69, net 106.99, No. 100,940; Ferdinand Schlesinger, Milwaukee, tonnage, gross 2,607.70, net 2,081.52, No. 120,841; Ideal, Cleveland, tonnage, gross 20.88, net 13.18, No. 100,491; Masaba, Cleveland, tonnage, gross 2,431.71, net 1,992.03, No. 92,298; Maxwell A., Port Huron, tonnage, gross 67.46, net 46.88, No. 93,302.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, ILL., May 28.

There doesn't seem to be any use of writing more about grain freights. Rates are down to a cent a bushel on all kinds of grain, something without precedent in the latter day marine. Boats are indifferent whether they take full loads or not. They are quite as likely as not to go 10,000 to 20,000 bushels short of their usual cargoes if they can save the expense of trimming. In fact, there is money saved in going with short loads for many boats.

The leading news of the week in a marine way here is the change of harbor master and vessel dispatcher under the new administration. Jack McCarthy retires from the position of harbor master with all colors flying. He has succeeded in keeping traffic in the river moving as well as any man could under an administration that cared nothing for the marine interests. He becomes superintendent of the Independent tug line, but he will have other strings to his bow.

P. H. Fleming will soon leave the city on an extended trip for the benefit of his health.

The remodeled City of Chicago reached here on her first trip, Tuesday. She is certainly improved by the fourteen feet added to her length. It brings her out of water and adds to the appearance of her forward cabin wonderfully. Sunday, the regular summer time table of the Graham & Morton line goes into effect.

Commander Nicoll Ludlow is fast acquainting himself with the light-house service on the lakes. He is a pleasant spoken gentleman, with a straightforward way of speaking that shows he means to understand what is going on in the lake marine.

Brokers in Cleveland, in their letters to Chicago principals, give no light on the ore freight situation. They say it is fearfully dull in Cleveland, and they don't know what can be done. Vessel owners here had been asking themselves the same question for several weeks.

The war in east-bond merchandise is fairly opened. The line managers will try to restore peace in New York before the week is over. I venture the prediction there will be no permanent peace until package freight rates are reduced. The lines have tried getting full rates on flour when they were carrying wheat at less than cost; they have maintained high rates on provisions while corn was going at a cent a bushel. It is an abnormal condition of affairs, and so long as wheat is carried at 1 cent a bushel, some fellow is going to play a trick and get flour at less than tariff figures. Agreements are well enough in the winter, but when navigation opens an agreement becomes a town-meeting affair. But even in the winter it is claimed all rail rates are manipulated. When water competition comes freights must go to some point near the supply of boats and demand for tonnage. This season the supply is much larger than the demand, and all rates, agreements or no agreements, must sink to a lower level. The line managers may unanimously resolve to maintain a high tariff, but when gangways yawn for freight and the freight cometh not, high rates cannot be upheld.

Shipping Master Guneo opens up his office each morning and closes it every night. The rest of his labors for the vessel owners' association are not so evident. The sailors' union was too well organized before he took hold to make much headway this season. Once in a while a sailor or cook drops in, and Capt. Guneo sends him to some out of town port for a berth. The vessel owners are taking no particular part in the fight. They ship such men as they can find, and these now happen to be union men. There is but little of that intense anti-union feeling to be found here as at other ports on the lakes. Vessel owners say the union is now on top, but that it will break its own neck as it always has done before many seasons.

No New Contracts.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, Mich., May 28.—F. W. Wheeler returned from a trip to New York, but is very reticent as to the results thereof. On his return from a former eastern trip he brought back a contract for the Nicaragua Canal Company's steel coaster, but it was not until several days after his return that the new contract was made public, and then it came from sources entirely outside the yard. The work on the various vessels undergoing repair at the yards here is nearly completed, and but little more will be done this summer. The schooner building at Davidson's for the Davidson Transportation Company will be launched this week. With the exceptions of what few repairs are to be made to the Monohansett, this closes up the work at this yard.

Lumber shipments during the past week have been livelier than at any time during the season. Rates remain the same and will probably continue at the present figure throughout the summer.

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Canadian Marine.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., May 28.—There are between six and seven thousand tons of iron ore on the line of the K. & P. railway awaiting shipment to Cleveland and other American ports as soon as the market gets better. Prices are so low now that it would not pay to ship.

The new steamer North King has left the old dry dock. In a couple of weeks she will be running across the lake to Charlotte. She is a very fine boat.

Notwithstanding this is a dull season in timber carrying, the propeller Niagara has made two trips to Manistee. She is now off on her third.

Work on the dry dock is being rapidly pushed forward, but at present it is impossible to say when it will be ready to receive a boat. The gates are now occupying the attention of the workmen.

The accident which occurred to the Veronica, it is thought, will hurry the government in putting range lights in the harbor and putting out better and larger buoys. The captain of that steamer said that if the harbor had been properly marked the accident would not have taken place.

Capt. William Dandy, native of this city and one of the most energetic skippers, has moved to Detroit with his family.

Capt. Joseph Dix, of the White Oak, intends making more trips this season than any other transient master in the harbor.

The office of Breck & Booth, which is the headquarters for marine news and where waiting captains congregate, has been removed about 100 yards from the old place. Capt. Booth says this season beats the record for scarcity of charters.

The schooners Minnedosa and Kildonan arrived here with nearly 100,000 bushels of grain. This trip is not a gold mine. The steamer Glengarry, which had them in tow, broke her machinery and had to remain in the west, while the Thompson went from here and brought back her tow.

The R. & O. Co. intended to compound the engine in the Corsican, but the order has been cancelled owing to the lateness of the season.

Nothing further has been heard in parliament about the reciprocity in wrecking bill. The probabilities are that it will remain dormant until the two countries discuss the reciprocity question.

The Ogdensburg Towing Company has raised the tug Fred. Wheeler, which was sunk near that city by the ice last fall. She will soon be at work again.

Ashtabula's Life Saving Station.

Special Correspondence to the MARINE REVIEW.

ASHTABULA HARBOR, O., May 28.—Supt. Dobbins of the Ninth life saving district, is much pleased over getting off his mind the location of a station at this port. He worked therefor long and persistently, and under many depressing conditions. The railroad people, who have land to spare along the river, and whose traffic will be materially benefitted by future protection to ore vessels, have acted very hoggishly in the matter, with one exception. Capt. Dobbins said that the Lake Shore company offered the government the best it had, but the others would not donate, lease or sell land for which they had no use.

The lot selected is on the beach 1,520 feet west of the river. It measures 100 feet in width by 351 feet in depth, and is quite near the water works building. The north end of the lot is about 200 feet from the water's edge, and between it and the lake are the filtering galleries of the water works. These galleries are below the surface of the beach, the filtering being done through the sand. The chosen lot is at the corner of Chestnut and Franklin streets, and was bought from William Hubbard. It is on the more civilized side of the harbor and is an admirable location.

Capt. Dobbins desires that the new station buildings shall be better than any others on the lakes. Work on them will be begun as soon as the preliminaries can be arranged, and the station is to be ready for service by early fall. On the north or beach end of the lot the boat house will be erected on piles, there being no protection from the lake. This house will be two stories high, and a lookout 40 feet in height will be attached. The lower floor will contain one of Dobbins unwreckable life boats and a surf boat, besides all the apparatus now used in the work of life saving, excepting the wagons. Back of the boat house will be the wagon house. This will be furnished with a Dobbins launching wagon and a beach cart, with all the necessary apparatus belonging thereto. The dwelling house will be erected on the south end of the lot, a short distance back from the street. It will be of two stories and arranged for the best accommodation of the keeper and his family. It has not been decided whether the sleeping quarters of the crew will be put in the second story of the dwelling house or the upper part of the boat house. In either case they will be roomy and comfortable. Both houses will be attractive in outward appearance.

From the boathouse to the lake an inclined runway will be erected on piles, for launching the boats. This will be about 200 feet long. By means of rollers a boat can be run into the water in a few seconds. The launching and beach wagons, when needed, can be taken out through the side street.

An extra boat house will be built on the east side of the river, on a lot 50x100 feet, kindly donated by the Lake Shore road. This house will not be so expensive as that on the lot bought from Mr. Hubbard. It will store a surf boat only, which will be used by the crew when it may not be advisable to take one of the boats out of the main house. From this double location arose the absurd story that that the boat house would be on the east side of the river, and the crew's dwelling house on the west side. Capt. Dobbins has a personal pride in the new station and he will watch its progress with a sharp eye. It will be a model of its kind.

Cleveland Matters.

The Cleveland Vessel Owners' Association now has a membership of 164 steam and 145 sail vessels, 309 in all, with a total net tonnage of 297,000. Last season's membership was 301 vessels of 262,097 tons.

Capt. Ed. Kelley, who is superintending the work of building the government light-ships for the Straits at the yard of the Craig Ship Building Company, Toledo, says they will be ready to leave the shipyard about August 15.

The Cleveland Ship Building Company is about ready to turn over to the owners the steamship Griffin, last of the four Lake Superior Iron Company's boats. Work has not as yet begun on the light-house supply boat Amaranth, but there will be no delay when the government officials are ready to go ahead with the boat.

"The greatest danger in connection with the McDougall tow barges is their helplessness when cast adrift," said a Cleveland vessel owner a few days ago. "McDougall has been trying to make a show by sending out a long string of them but the accident to the tow that broke adrift on Lake Superior a few days ago shows that there is great danger in handling them in that way."

Mr. A. W. Goodrich, of the Goodrich Transportation Company, Chicago, has been in the city during the past week looking after the construction of the steamers Virginia and Atlanta. The Atlanta will leave for Milwaukee, Saturday, but the big twin screw steamer will not get away until about June 15. The Atlanta is a good wooden boat and is being fitted out after the style of the elegant Indiana, about which so much has been said.

It would seem from the manner in which some of the big boats are making time in carrying iron ore to Tonawanda that delays in that trade do not warrant the feeling that exists against it among ore carriers. On a recent trip the steamer America made the run from Detroit to the docks of the Tonawanda Iron and Steel Company on Niagara river in 22 hours and 20 minutes. This does not seem like delay after reaching Buffalo harbor.

The Duluth customs official who refused to allow the American propeller Eber Ward to take Canadian bonded wheat to Kingston was right in his ruling. Only a few years ago an attempt was made to ship in Canadian hulls Iowa grain from the head of Lake Superior to Kingston and thence to Boston for export but the scheme was brought to the attention of the American government by Cleveland owners and was declared contrary to the coasting laws.

The Detroit and Cleveland Steam Navigation Company has secured the most valuable block of river front in the city for dock purposes, but will be prevented from utilizing it for some time on account of the Main street bridge being swung from the centre of the river. Necessary alterations on the new property may also delay occupancy of it until late next season. The property extends from Superior to St. Clair street, with railway connections covering all of the important lines of the city.

The talk of danger attending the present work of constructing a new lock at the Sault has caused a revival of a scheme for a canal between Lake Superior and Bay de Nocque, Lake Michigan. Offices of Cleveland vessel owners have been flooded with copies of one of the upper Michigan plains papers containing an article in favor of this project and asking that the next congress be petitioned for a survey at least. It is the general opinion that there are many improvements far more important than this, even were it known to be practicable.

It is reported in foreign journals that the Cunard company has placed a contract with the Fairfield Shipbuilding & Engineering Company for the construction of two new steamers, which will be the largest of their class ever built, being, it is said, vessels of 14,000 tons each.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland Iron Mining Company.....	\$ 25 00	\$ 15 00	\$ 16 00
Champion Iron Company.....	25 00	80 00	90 00
Chandler Iron Company.....	25 00	39 00	40 00
Chicago and Minnesota Ore Company.....	100 00	100 00
Iron Cliffs Iron Company.....	50 00	120 00
Jackson Iron Company.....	25 00	90 00	100 00
Lake Superior Iron Company.....	25 00	62 00	65 00
Minnesota Iron Company.....	100 00	68 00	70 00
Pittsburg Lake Angeline Iron Co.....	25 00	145 00	150 00
Republic Iron Company.....	25 00	26 50	28 50
Michigamme.....	25 00	5 00

Among the mines of the Menominee range, the Commonwealth is attracting most attention. The stripping on the new find of this company is progressing rapidly and everything is in readiness to go ahead with the construction of 8,000 feet of spur track. The ore body has proved up for a length of about 700 feet and averages where crosscut about 100 feet in width. There is in stock at the mine now about 30,000 tons of ore, and it will be possible to ship from all the openings, if the market warrants it, 150,000 tons. The company has sold some ore. Chapin's working force has been cut down so that it is now less than 1,000 men and the daily output ranges from 1,300 to 1,500 tons. The report that the Great Western mine at Crystal Falls had closed down and removed the pumps was caused by a reduction in the working force. The stock pile of the Great Western contains 15,000 tons of ore. Owing to the fact that the cost of reopening the lower levels of the Norway mine, closed by the recent cave, will be much more than the value of the ore that could be secured thereby, the pumps will be pulled out, and future work will be done above the water level. At the Millie only a few men are employed and the stock is not more than 7,000 or 8,000 tons.

Duluth citizens held a meeting a few days ago to consider the matter of a railway from that city to the Mesaba and Vermillion ranges. Already two companies are organized to build railroads in that direction, both of them speculative, prepared to go with their terminals wherever the greatest inducements are offered, and ready to sell out. It was proposed at the meeting to have Duluth and St. Louis county issue bonds for the building of the road, and thus own and operate it. A committee was appointed to consider the subject on all sides and report later. It is said that the road would not cost more than \$1,000,000. The district abounds in valuable timber in addition to its great mineral wealth.

The Norrie is the only Gogebic property that has as yet shipped any large quantity of ore, and the shipments of this mine have not been more than 4,000 tons a day against 6,500 to 7,000 tons a day last year. The shaft at the North Pabst, now in mixed ore, has been sunk to a depth of 472 feet, and 20 feet more will bring the mine into good shipping ore. The Comet has about 15,000 tons in stock, but attention is being given now to development. Two shafts are now being sunk on this property and an additional one on the Norton (formerly Pittsburgh) adjoining.

John M. Longyear, the Marquette millionaire who is well known in connection with Lake Superior ore interests, said a few days ago in referring to the depressed condition of the market: "There is literally no market for iron ore. We have overdone the thing—killed the goose that was laying the golden egg. Lake Superior can supply the world with iron, and it has been doing so; but not having access by rail or lake to Jupiter, Mars, Saturn and other planets, the market cannot absorb all that we are able to get out."

Young men who have rendered valuable service to the ore companies during the past several years of prosperity among agents of the Lake Superior mines are being rewarded in Cleveland. The latest announcement is that Mr. W. H. Becker has been admitted to membership in the firm of J. H. Outhwaite & Co., agents for the Lake Angeline and other valuable properties. The members of this firm now are J. H. Outhwaite, William G. Pollock and W. H. Becker.

The East Negaunee mines, Schlesinger syndicate, are being worked very actively and will make a showing in shipments equal to any of the mines of the Marquette range. A big sale of the ore

of these mines was reported a few days ago. They have nearly 200,000 tons in stock. The Cleveland mine of the same range has about 70,000 tons in stock and the Volunteer 30,000 tons.

The Winthrop Iron Company has purchased the old steam shovel of the Lake Superior company for use upon its stock piles. The big new shovel of the Lake Superior company is not yet working well. The power is said to be short of requirements, but this can, of course, be remedied.

Mining Engineers.

The American Institute of Mining Engineers will hold its fifty-ninth meeting in Cleveland, beginning June 2. Opportunity will be given for the discussion of papers presented at the New York meetings of the Iron and Steel Institute of the society and at the international sessions at Pittsburgh. The topics named below have been suggested, and all papers relating to them will be subject to comment, and new facts may be introduced independently. The topics are as follows: The Preparation of Anthracite Coal, Mr. Coxé; Bituminous Coal Mining, Mr. Ramsey; Methods of Analysis of Iron and Steel, Professor Langley; Electrical Motors, Mr. Spaulding; Electric Welding, Professor Thomson; Lessemers Practice, Messrs. Howe and Cabot; Open-hearth Practice, Messrs. Campbell, Thielen, and Wellman; Blast Furnace Practice, Messrs. Wedding, Gayley and Shinn; Rolling Mill Practice, Messrs. Daelen, Wedding, Wellman and Morgan; Tunneling, Mr. Carson; Compressed Air Motors, Professor Jacobus; The Magnetic Separation of Iron Ores, Messrs. Jones, Fowle, McDowell, Ball and Birkinbine; The Chlorination of Sulphides, Messrs. Thies and Phillips.

Big Importation of Canadian Logs.

About 160,000,000 feet of Canadian logs from the Georgian bay district will shortly be taken to Michigan points and manufactured into lumber. The transportation of this lumber will result to the advantage of the American carrying trade but it is worrying the Canadians. The government of Ontario decided some time ago that the sales of timber limits would be subject to the condition that all the logs cut therefrom must be sawn in the province, but the timber land from which these logs were taken was secured previous to this announcement on the part of the Ontario government, and now the American owners of the logs are taking them to Michigan under the Canadian ruling for the removal of the duty on logs to meet the requirements of the McKinley tariff act. The conditions under which the timber limits of the provinces are sold are under the exclusive control of the provincial governments, but some of the Dominion papers are now pleading with the Dominion parliament to stop this movement of logs into Michigan, on the ground that it is a question of customs duties.

Detroit River Lights.

Advices from Ottawa are to the effect that there is little hope of the Canadian government relieving vessel owners of the expense of maintaining private lights on the Canadian side of the Detroit river during the present season. Some of the Canadian vessel owners and two or three of the members of parliament from the lake districts, among them Hon. William McGregor, have been engaged in an effort to have the department of marine and fisheries take the matter up, and they have succeeded in causing inquiry on the part of the government regarding the cost of maintaining the lights, but the officers in charge are decidedly opposed to increasing expenditures in this line. Surely the American government has done its share many times over toward improving the connecting waterways of the lakes, common to the shipping of both counties.

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MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

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The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels.....	1,272	328,655.96
Canal boats.....	657	67,574.90
Barges.....	54	13,910.09
Total.....	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent. of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886.....	85	20,400.54
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
Total.....	902	393,597.03

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Annual tonnage entries and clearances of the great seaports of the world, for 1889: New York, 11,051,236 tons; all seaports in the United States, 26,983,315 tons; Liverpool, 14,175,200 tons; London, 19,245,417 tons.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to 36,203,606 tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.

Entered at Cleveland Post Office as Second-class Mail Matter.

THERE was cause for rejoicing when the last congress included in the river and harbor act of September a clause increasing the power of the war department with regard to obstructions in navigable streams. The first experience of lake vessel owners with Gen. Casey, chief of the engineer corps, in the enforcement of this act is far from an assurance that the intention of congress will be faithfully carried out. The removal of the bridge obstruction in the Chicago river at Canal street is a matter of vital importance to lake marine, on account of matters at other ports dependent upon it, but it has been treated by both Gen. Casey and Assistant Secretary Grant in a manner that has caused a great deal of unfavorable criticism. The vessel owners were met at the outset with vigorous opposition from the chief of engineers, who is generally against vessel interests in matters that come before him. To gain time and in the hope that they would avoid the necessity of taking jurisdiction of the river altogether, the war department decided to refer the matter of their jurisdiction to the department of justice for an opinion. In the meantime they caused Captain Marshall, the United States engineer officer stationed at Chicago, to make an examination and report as to the nature of the obstruction caused by the bridge and abutment. Capt. Marshall's report was a complete vindication of the position of the vessel men on this point. He declared the bridge an unreasonable obstruction to navigation, and said it should be removed at once if the department had jurisdiction to cause its removal. Then followed the opinion of the attorney general holding that the war department had, under the last river and harbor bill, full power to cause the removal of

this bridge and abutment. These officers were in all probability surprised at the opinion rendered by the attorney general. This opinion leaves the department nothing to do but to order the removal of the bridge, and it is said that such an order will be issued within a few days. Instead of acting in good faith and in accordance with the intention of congress, as expressed in the river and harbor bill, Assistant Secretary Grant and Gen. Casey both go out of their way to encourage the city of Chicago to pay no attention to the order which they propose to issue and to encourage it to enter into a litigation with the government. They even go so far as to point out a legal decision which they hope will prompt the city of Chicago to commence such a litigation. Only a few days ago Secretary Grant, in spite of the fact that he had just received from the highest law officer in the United States government an opinion that an order from the war department for the removal of the bridge would be perfectly valid, admitted to a Chicago newspaper correspondent that he was in hope the law department would take the matter off his hands and he then called attention to an adverse decision in a case said to be similar, thus urging the city of Chicago to bring legal action. Gen. Casey expresses himself in the same strain, for he is quoted as saying: "The order to remove the bridge would give the interested parties until about August unless it should be decided to go into court, and no one can predict what the outcome would be. There might be found another judge like Judge Shiras, who would decide against the jurisdiction of the war department, on the ground that congress has no right to delegate its authority over navigable waters of the United States."

THE investigation regarding alleged Duluth wheat frauds now being carried on by a committee of the Minnesota legislature may not reveal anything of importance, but enough has already been brought out to prove irregularities in the elevator business at the head of the lakes. In matters of litigation over the question of shortages in cargoes of grain taken from Duluth to Buffalo, the irregularities proven in the investigation will have a bearing. One or two suits over this question of shortages are already in court and they will be contested vigorously. Shortages in Duluth cargoes are too numerous of late.

Foreign Inventions and Improvements.

The principal feature of an improved marine boiler, placed in a steamer at Hull, consists in the provision of two distinct sets of tubes, the lower ones being three inches in diameter, and the upper ones five inches in diameter. The gases first pass from the combustion chamber to the lower tubes, and then through the upper ones on their way to the funnel. It is therefore likely that by this arrangement the temperature of the escaping gases will be considerably lower than in the ordinary marine multitubular boiler, and thus economy of fuel will be effected. The boiler, which is thirteen feet in diameter and nine feet long, has two corrugated furnaces three feet five inches diameter, with a grate surface of thirty-eight square feet and a total heating surface of 1,500 square feet. This boiler burns 20.3 pounds of coal per square foot of fire grate, and is said to evaporate 10.1 pounds of water per pound of coal, calculated at an absolute pressure of 195 pounds. These results, if correct, are very satisfactory.

The Fairfield Company recently fitted Serve tubes to a new vessel, the Phra Nang, while plain tubes were fitted to a sister ship. A report of the engineer of the Phra Nang has just been received, stating that on the run out to China there was an appreciable saving of coal as compared with the vessel fitted with plain tubes.

The Marque adjustable blade propeller wheel has been tried recently in England and gave the same results as a regular bladed wheel. The advantage claimed for this device is that the wheel can be adjusted for any work and when it is desired to trail the wheel and sail the steamer the blades can be turned so that they present no resistance to the water. A. Marque, Brussels, is the inventor.

Meetings of Iron Mining Companies.

The Chandler, Cleveland and Milwaukee companies have all held meetings during the past week. Mr. William G. Mather was elected president and treasurer of the Cleveland company and a dividend of \$1 payable June 10, was declared. This dividend is for the Cleveland stockholders in advance of the Cleveland-Cliffs consolidation now under way. The Chandler company makes a very good showing but nothing is said about a resumption of dividends.

Pump or Injector.

We know of an engineer who had the question asked him by his employer if it would not be better to have an injector for his boiler than the power pump he was using, "because all the heat went right back into the boiler again, and heating the feed water." This is the way he figured it out to see what he had better do:

If 1,000 pounds of water is to be pumped into the boiler by an injector, raising the temperature of the water in doing so 70° , as one heat unit will be required to raise one pound one degree, $1,000 \times 70 = 70,000$ heat units are required to raise 1,000 pounds 70° . Taking the total heat of steam from 62° as representing 1,145 units of heat, this work will require $70,000 \div 1,145 = 61$ pounds of steam, to make which, assuming an evaporation of 8 pounds per pound of coal will require $61 \div 8 = 7\frac{5}{8}$ pounds of coal to do the work with the injector.

Taking 1,000 pounds pumped by the power pump run by a belt driven primarily by a Corliss engine, against a pressure of 60 pounds, equal to a height of 120 feet would require $120 \times 1,000 = 120,000$ foot pounds of work to be performed, or nearly 4 horse power, for a minute. The engine would use 30 pounds of steam at the outside per horse power per hour, or one-half a pound per horse power per minute. The 4 horse power therefore would need $4 \times \frac{1}{2} = 2$ pounds of steam. This two pounds of steam, on the same evaporation as with the injector, would require one-quarter of a pound of coal to do the work.

Another method he tried, was to take a pump duty of 70,000,000 foot pounds per 100 pounds of coal as a basis, a low duty. Therefore one pound of coal would do a duty of 700,000 foot pounds, but as the work he was to do was but 120,000 foot pounds, it would require but its proportion of the pound of coal, or about one-fifth. From this figuring he reasoned that the injector was not going to be so economical as his pump, especially when he would not consider the raising the temperature of the feed water in the matter, because he used a feed water heater and he considered he was getting that heat for nothing, since otherwise he would throw it away.—Boston Journal of Commerce.

The Howard-Cassard.

The Howard-Cassard, recently put forth at Baltimore, is still attracting a great deal of attention in marine circles on the coast. Her builders assert that she can neither burn nor sink, and that, even if upset, she has in a high degree the property of righting herself, as she has four pounds weight below water-line for every one pound above it. Her keel, which weighs 35 tons, acts not only as ballast, but as a centre board, inasmuch as nearly half of its depth protrudes through the hull into the water. In consequence of its extra rigidity the keel makes far safer and better engine and shaft bearings than those used in the ordinary methods of shipbuilding. The difference between the safety compartment of the Howard-Cassard and those of vessels constructed under the existing system lies in the fact that this vessel has air as well as water-tight compartments, whilst under the actual system vessels are provided with water-tight compartments alone. These safety compartments number 170, of which 136 are on either side of the ship's centre, thus forming practically three ships in one. The motive power consists in an improved compound engine, calculated to develop 1,600 horsepower, which would drive the ship at an average speed of 25 miles an hour on a consumption of one ton of coal. The valve gear is so perfected that the valves may be opened and closed in the one-twentieth part of a second, thus giving double power over engines of similar size. The Howard-Cassard is 222 feet over all, or 206 feet between perpendiculars. She has 16 feet

beam and 18 feet depth of hold. She is built of rolled iron plates on the cellular system. It is asserted that if an ordinary steamship be taken from the water, and supported only at the stem and stern, she would break in half, whilst the Howard-Cassard, like a tubular bridge with a hull upon it, would support several times its own weight. This vessel is only an experiment, and of only two-fifths of the proposed dimensions of the regular steamship which is to be built. It is proposed to run these ships between Baltimore and Havana, carrying passengers, mails, and express matter (parcels) only. Later a regular ocean steamship line will be started. The promoters and builders assert that their system will completely revolutionize ocean traffic, and that in the future, instead of having a mixed service, there will be passenger and freight steamships only, just as on land there are passenger and freight trains.

Quadruple Engines.

On the first page is an illustration of the engines of the New York and Western Railway Company's tug Dorothy, built by the Newport News Dry Dock and Ship Building Company from specifications and directions of Horace See, naval architect, New York. The engine occupies less space than the two crank double compound of the same power, the coal endurance being much greater. The cylinders are $9\frac{3}{4}$, $13\frac{1}{2}$, $18\frac{3}{4}$ and 26 by 22 inches stroke, using steam at 180 pounds from a boiler $9\frac{1}{2}$ by $10\frac{1}{2}$ feet long, built by the Lake Erie Boiler Works. The lower cylinders are bolted together and supported on one side by two columns cast on the condenser, and on the other two by wrought iron columns fastened to the bed plate, the cast columns forming the guides.

Points For Young Mariners.

A grizzled individual in the attire of a farm hand prowled along the docks all day. With all his rusticity of attire there was a tinge of tar and bilge water about him that added to his swagger and stamped him unmistakably as a son of the sea. His movements attracted considerable attention as he boarded vessel after vessel and inspected the pumps and then whistled for the ship's dog. His cruise extended from the sea wall to Harrison street, and it was at this point that he was accosted by one of Franklin's runners.

"Want to ship, old man?" he asked, as the stranger climbed down from the top-sides of the Lady Cairns.

"Yes, I'm going to sea again," was the reply, accompanied by the observation that ranching was not what it was cracked up to be.

"I'll get you a good ship," suggested the runner.

"Well you needn't bother. I've been to sea for forty years, and mebbe I knows enough to pick out a ship for myself."

"What are you looking for?"

"A fat dog and a rusty pump bolt, you bloody lubber. What do you 'spose I'm looking for?"

"Come and have a drink," suggested the runner, who was anxious to learn the connection between a fat dog and a rusty pump bolt and a desirable ship.

"Well, lads, I'll tell you," said the intimate friend of Neptune, "and you want to remember this, because 't'll be useful some day. It took me many years to larn it, but it's yours for the sake of your kindness. Mark what old George Palmer tells you—when you want to ship look for a fat dog; that means the old man is liberal with his duff and you'll be well fed. Look for a rusty pump bolt, 'cause that means that the craft is right and tight and the crew don't have to break their hearts and backs keeping her dry. If the pump bolt is worn and shiny look out, lads, for she's a seive, and your watch below will be spent in keeping her hold dry."—San Francisco Examiner.

A new life raft is described in the New York Sun which may be folded up so that it shall take up no more deck room than does an ordinary lifeboat, and which may, in fact, be made a chuck for the reception of the life boat; under this arrangement both boat and raft may, by an ingenious but simple contrivance for handling, be put overboard by the same set of davits, the raft following the boat so quickly that the two are set afloat within a couple of minutes of each other.

Around the Lakes.

Seamen's Union at Chicago has reduced sailors' wages on schooners and barges from \$2 to \$1.75 a day.

The schooner Badger, owned by P. W. Kirtland, has been sold to John Hummel, of Green Bay for \$800.

The Eber Ward Lake Superior Line is now made up of the propellers Toledo, Saginaw Valley and A. L. Hopkins.

Capt. Daniel Coughlan has been appointed master of the excursion steamer Pearl, running between Buffalo and Crystal Beach.

Wreckers are still at work on the schooner H. W. Sage, ashore since last fall at Hammond's bay. A portion of her ore cargo has been removed.

A two-thirds interest in the barge Transport has been transferred by H. H. Hickmart and William Wybrands to B. Whitaker & Son, of Detroit, for \$550.

Work on the new Lake Shore ore dock at Ashtabula is not progressing as rapidly as was expected. The force of workmen has been reduced about 100 of late.

H. H. Gardner & Co., Escanaba lumber dealers, propose moving their plant to Georgetown, S. C. They have purchased a large area of heavily timbered land.

The \$35,000 job of dredging which is to be done at the mouth of the Saginaw river was begun last week. McCollum & Lee, of Welland, Ont., have the contract.

The Lehigh Coal and Iron Company will build fifty coke ovens at Superior, increasing its plant to 120 ovens with a total annual capacity of nearly 100,000 tons of coke.

The propeller Iosco got 50 cents and not 45 cents as reported on her first cargo of soft coal to Duluth. The Duluth rate has been very strong since the opening at 50 cents.

Capt. Fletcher Hackett, a lake master who retired a number of years ago on account of blindness, died on the 18th inst. at his country home near Hale's Corners, Milwaukee county, Wis.

At last accounts the steamer B. W. Arnold was ashore on Green island, 3 miles east of Mississagua straits, Georgian bay. She was on rock bottom and out her entire length. Her schooners escaped the reef.

The propeller H. S. Pickands has been sold by Charles L. Ortman to A. Chesebrough, of Detroit, for \$30,000. The Pickands was built in 1885 at Grand Haven, rates A1 and is valued by Lloyd's at \$43,000.

Secretary Vance, of the Milwaukee lodge, E. M. B. A., is still adding names to the membership list. Timothy Kelly, of the propeller Manchester, and Peter Peterson, of the propeller T. S. Christie, are the latest additions.

Even the propeller John B. Lyon has been forced to desert the grain trade and take a cargo of ore from Escanaba. This is all the more surprising when it is known that the ore can not have paid more than 55 or 60 cents.

That yarn from New York about a combination of lake and rail lines to knock out the Erie canal, is considered richly ridiculous by local canal men. Capt. Henry, of the Lehigh Valley Line, said there was nothing in it.—Buffalo Courier.

About 10,000,000 feet of lumber was shipped from Ashland to Chicago and Buffalo last week, and the shipments for the present week will probably show an increase. This Lake Superior lumber business will help the general freight market.

The barge H. R. Newcomb, which went ashore last fall near Oswego, has been given up as a total loss, although it was thought she would go through the winter. Smith, Davis & Co., of Buffalo, insured her for \$21,400 and the owners, Hall & Co., of Ogdensburg, are about to secure payment.

Thomas H. Smith, of Sturgeon Bay, has secured a contract for the transportation during the next three years of about 100 cords of stone a day, between Drummond island and the Sault. The tug L. D. Smith and the schooners Harry Johnson, Emerald and two others will begin work on the contract shortly.

Grummond's tug, William A. Moore, took the Anchor Line steamer Conemaugh, disabled by the breaking of her shaft, from the St. Clair flats to Detroit, Saturday. The tug Leviathan, of the same line, gave assistance to the schooners Surprise and R. B. Hayes, the former having grounded at Charlevoix and the latter at Bois Blanc in the Straits.

The propeller Edward Smith, Capt. Alfred Mitchell and Engineer Nelson Goulette, towing the schooners Marvin, Fryer and Filmore, with aggregate cargoes of 2,742,920 feet of lumber, made her third round trip for the season between Oscoda and Tona-wanda in 5 days and 13 hours. The three trips, completed on the 18th inst., were made in 25½ days.

The lumber steamer Norwalk, built by Capt. Dulac, of Mt. Clemens, is fortunate in having a good lumber contract, although it cost \$2,500 to get her down the muddy Clinton river after being launched. She will carry 5,000,000 feet of lumber from Marquette to Cleveland at 25 cents above the Bay City rate and will undoubtedly get a fair freight on return coal cargoes. The boat will carry about 1,000,000 feet a trip.

The Buffalo Express in discussing the matter of repair bills on old wooden vessels, finds that on the books of one ship yard company there are charges since 1863 against the propeller Araxes, now on the bottom of the Saginaw river, amounting in all to \$49,223.57. Her hull cost about \$29,000 in 1856. The aggregate of wrecking bills and repairs at other yards would furnish a sum sufficient to build several new vessels.

George W. Doerzback, of Sandusky, has begun suit against Smith, Davis & Co., of Buffalo, to recover the insurance on the propeller Nevada, which was lost on Lake Michigan on Nov. 14 last with a coal cargo from Sandusky to Manitowoc. The insurance was for \$50,000. Kelderhouse and others of Buffalo who sold the Nevada to her Sandusky owner are thought to be interested in the suit, though not appearing in it.

A story from Chicago a few days ago said that one of the customs officials at that port had refused to grant a vessel a clearance that would allow her to go light from one port to another in the same district and take on cargo at the latter port without reporting or clearing. The customs official in this case exceeded his authority, although his action was in accordance with the desire that vessels be compelled to report and clear every time they enter or leave port.

Capt. Thomas Wilson, of Cleveland, owner of the propeller Olympia, and Capt. C. H. Weeks, of Bay City, owner of the lumber schooner John Sherman, will probably reach an amicable settlement regarding the loss to the Sherman from being run into by the Olympia. The expense attending the work of relieving the boat of 190,000 feet of lumber in her hold as well as the repairs to the break in the hull, if she is repaired at all, will be quite heavy. When the Olympia ran into her she was going at the rate of 10 miles an hour, while the Sherman was moving along at the rate of seven. The Sherman was struck a diagonal blow leading toward the cabin, the Olympia making a hole in her that extended 16 feet downward and 7 feet inward. Almost all her butts were started and the boat is about broken in two. Her owner values her at \$6,000 and she is insured for \$3,000.

Notice to Mariners.

The notice from the light-house board regarding the Windmill point ranges, now operated by the government, says: "The lights are fixed red and the structures are on the northeasterly prolongation of the axis of the channel between Belle Isle and Isle aux Peches, Detroit river, Mich. The lights are 437 feet apart on a line approximately S. W. ¼ S. (S. 44° W.), true. The front light is a lens lantern, and the rear light a sixth order lens, each illuminating 135° of the horizon looking down the range. The structures are square pyramidal wooden skeletons, with the upper part inclosed, each surmounted by a black lantern. The front tower is painted red and the rear tower white. The front light is 34 feet above the mean lake level and the rear light is 49 feet above the mean lake level. From the rear light Isle aux Peches (west end) red buoy is distant about 6,600 feet and Belle Isle light-house about 11,000 feet. The range line passes about 400 feet northwesterly of Isle aux Peches buoy, and about 650 feet southeasterly of Belle Isle light-house.

American Oak Timber.

Vessel owners have probably noticed a movement of oak timber from the upper lake districts to the seaboard of late. A great deal of timber is also going from southern districts to New Orleans. Several concerns in this country are now making a specialty of the business of exporting this timber. Only the best of it is selected and the bulk of it goes to France to be used for interior house finishing.

Affairs in Admiralty.

The current issue of the Federal Reporter contains in full the decision of Judge Severns, of the United States district court at Grand Rapids, Mich., in the case of the Reid Towing and Wrecking Company against the Canadian propeller Athabasca. Reid constructed at Sault Ste. Marie in July 1888 a raft 1,200 feet long, 250 feet wide, containing 1,500,000 feet of logs included in a sack boom, consisting of timber fastened together at the ends with chains, and having two or three cables thrown across to prevent spreading. Two tugs were stationed, respectively, at the head and rear of the raft to help it along and crowd it over to one side of the channel so as to permit of the passage of vessels. Entering a long, narrow channel in the Sault Ste. Marie river, between Squirrel island and Cunningham's dock, where the current is about four miles per hour, one of the tugs was sent down stream to warn approaching vessels. Such warning was given the propeller Hiawatha and her tow, but none was given to the Athabasca, a large steel passenger steamer, although her smoke was seen from the tug. As soon as the Athabasca became aware of the approach of the raft, she checked her speed as much as possible without losing her steerage, and kept as close as prudent to the Canadian shore. At this time the raft was sweeping rapidly down stream, with a tug at either end, striving to pull it to the opposite side of the river. This resulted in carrying over the ends, leaving a large bulge in the middle of the raft, reaching within 60 feet of the Canadian shore. The Athabasca, not having sufficient room left her in which to pass safely, changed her course, and went through the raft, stem on, breaking the boom and scattering its contents, resulting in a total loss amounting to \$12,000, which the libellant sought to recover. The court held that it was a hazardous undertaking to take a raft of such size, form and structure down the Sault Ste. Marie river, knowing the perils incident to the almost constant passage of vessels, the swiftness of the current, and the occasional narrowness of the stream; and that it was an added negligence not to take effective means to warn the Athabasca before she reached the narrows, her approach being known; and that such negligence constituted the cause to which

the collision must be attributed. It was held further that both Canadian and federal courts clearly recognize the right to tow logs in raft on navigable streams, such as the Sault Ste. Marie, but that such right must be exercised with due regard to the rights of others, and the general usages and customs of navigation and commerce on such waters; and that while the libellant, in the exercise of such right of towage, was entitled, for the protection of its raft, to full observance on the part of others of the established principles of navigation, yet the way in which the libellant exercised such right would necessarily effect its claim upon the diligence of others. The negligence of the libellant being established as the inducing cause of the collision, the charge of accessory negligence on the part of the respondent must be clearly made out before damages should be divided. None of the grounds suggested as showing contributory negligence on the part of the Athabasca were sufficiently established to warrant the court in dividing the damages.

The schooner Jesse Night, passing down Chesapeake bay at night, south by east, met the steamer W. R. McCabe making north-north-west, the red lights of each appearing slightly off the port bow of the other. The steamer turned slightly east, and the schooner, when from 300 to 400 yards off, also turned in the same direction and collided. Judge Butler, of Pennsylvania, eastern district, held that as the schooner should have assumed, when so close to the steamer, that the latter had accommodated himself to the situation, and should have held her course, she was in fault. The steamer failed, however, to keep well off from the schooner, which, when about 300 or 400 yards off, made an abrupt turn, causing the disappearance of the lights. It did not appear from the steamer in which direction the change of course was made. The steamer was accordingly held in fault also for not stopping or reversing, even if it was not certain that stopping or reversing would have avoided the collision.

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TO IRON MANUFACTURERS AND CONTRACTORS. Office of U. S. Light-House Engineer, Ninth District, Detroit, Mich., May 19, 1891. Sealed proposals will be received at this office until 4 p.m. of Tuesday, the 16th day of June, 1891, for furnishing the materials and labor of all kinds necessary for the completion and delivery of the metal work for the Chicago Harbor Light-Station, Illinois, and for its erection at the site. Plans, specifications, forms of proposal, and other information may be obtained on application to this office. The right is reserved to reject any or all bids. WILLIAM LUDLOW, Light-House Engineer. Ju 11

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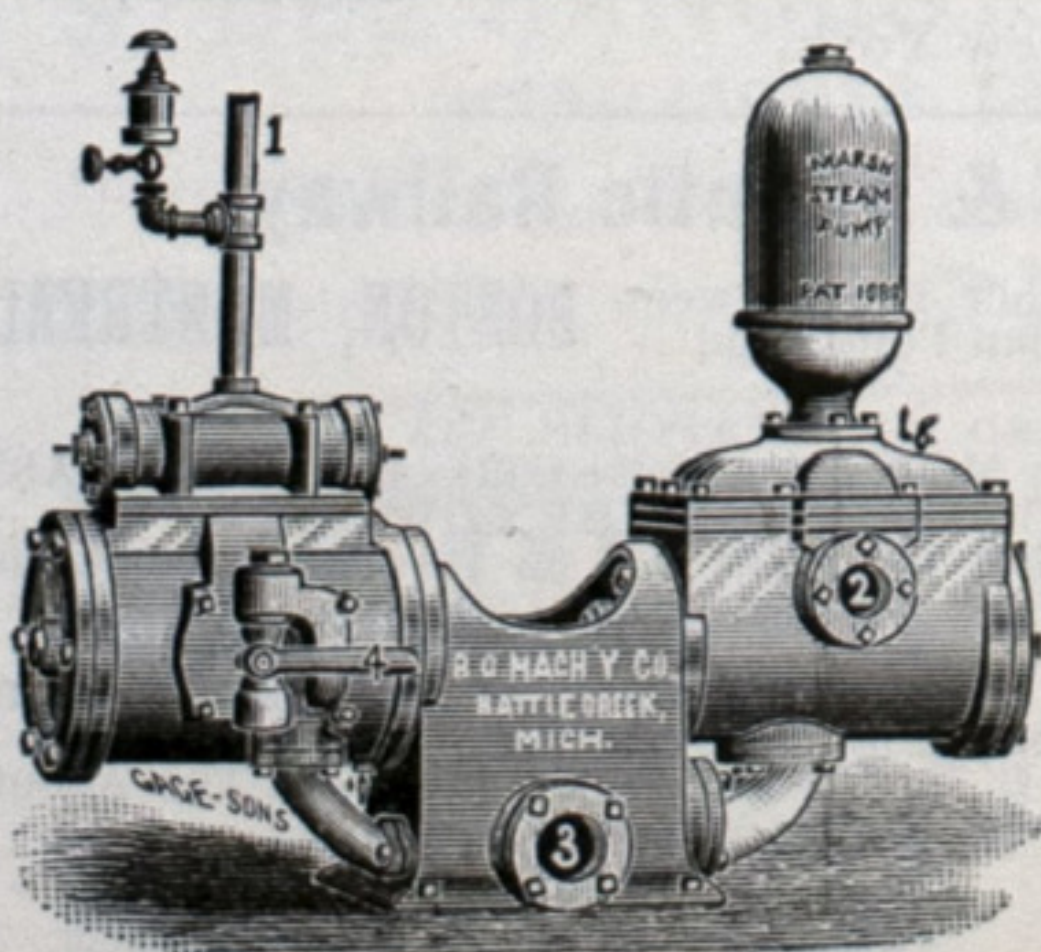
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PROPOSALS FOR CHANNEL EXCAVATION. U. S. Engineer Office, Buffalo, N. Y., April 30th, 1891. Sealed proposals, in duplicate, for excavation of material at the following points, will be received at this office until 2 P.M., on Saturday, the 30th day of May, 1891, and opened immediately thereafter in presence of bidders: Olcott Harbor, N. Y., between the piers, Oak Orchard Harbor, N. Y., between the piers, Niagara River, N. Y., near Strawberry island. The attention of bidders is invited to Acts of Congress, of February 26, 1885, and February 23, 1887, vol. 23, page 332, and vol. 24, page 414, Statutes at Large. Specifications, general instructions to bidders, blank forms of proposal, or necessary information, will be furnished on application to this office. The United States reserves the right to reject any or all proposals. AMOS STICKNEY, Major of Engineers, U. S. Army. May 28

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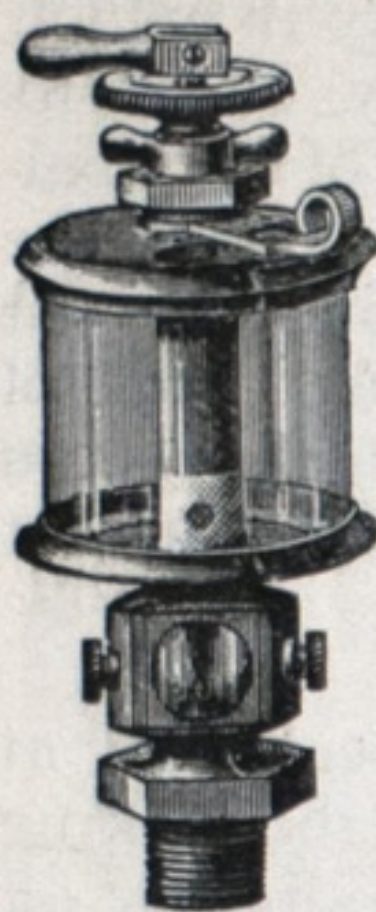
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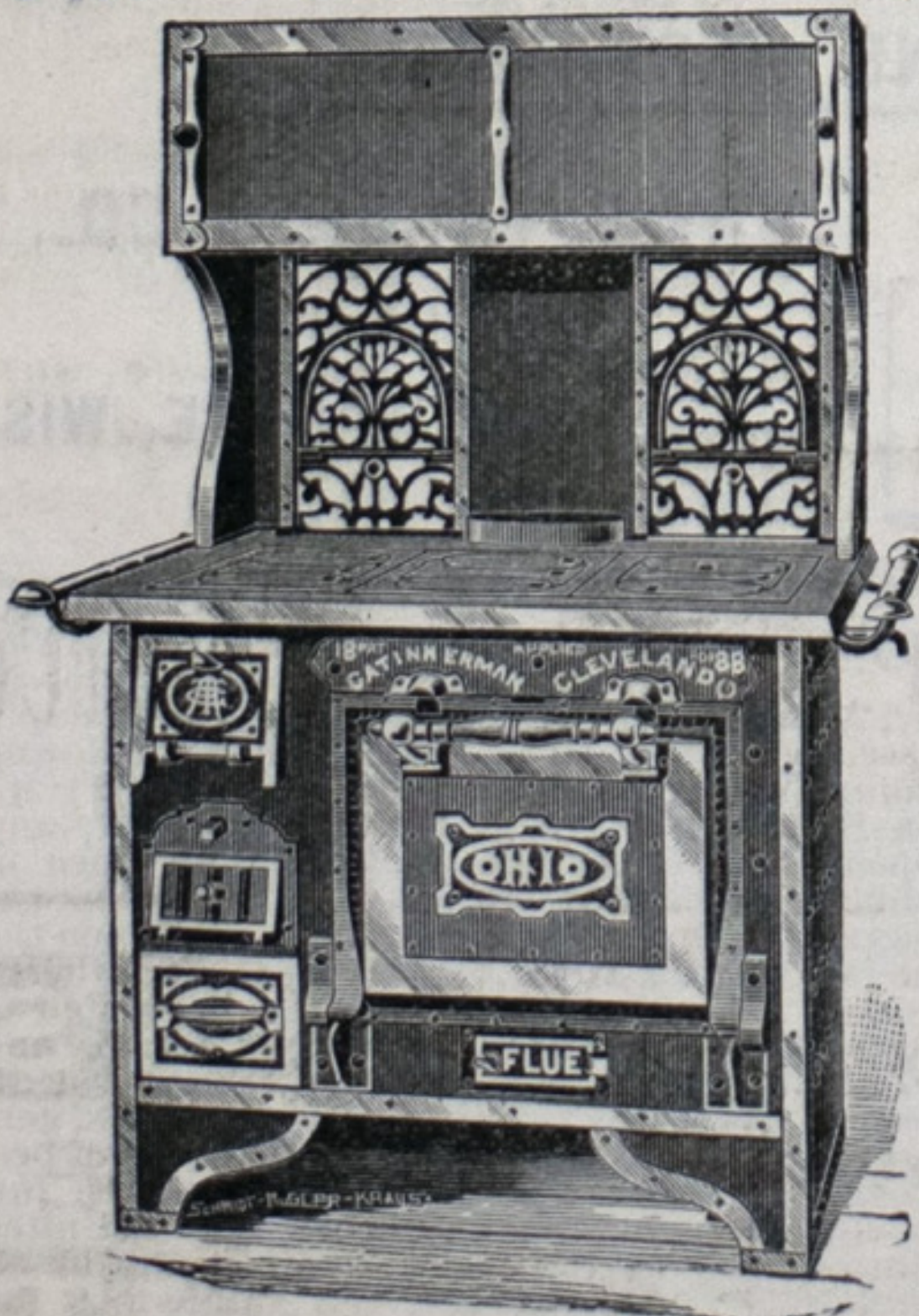
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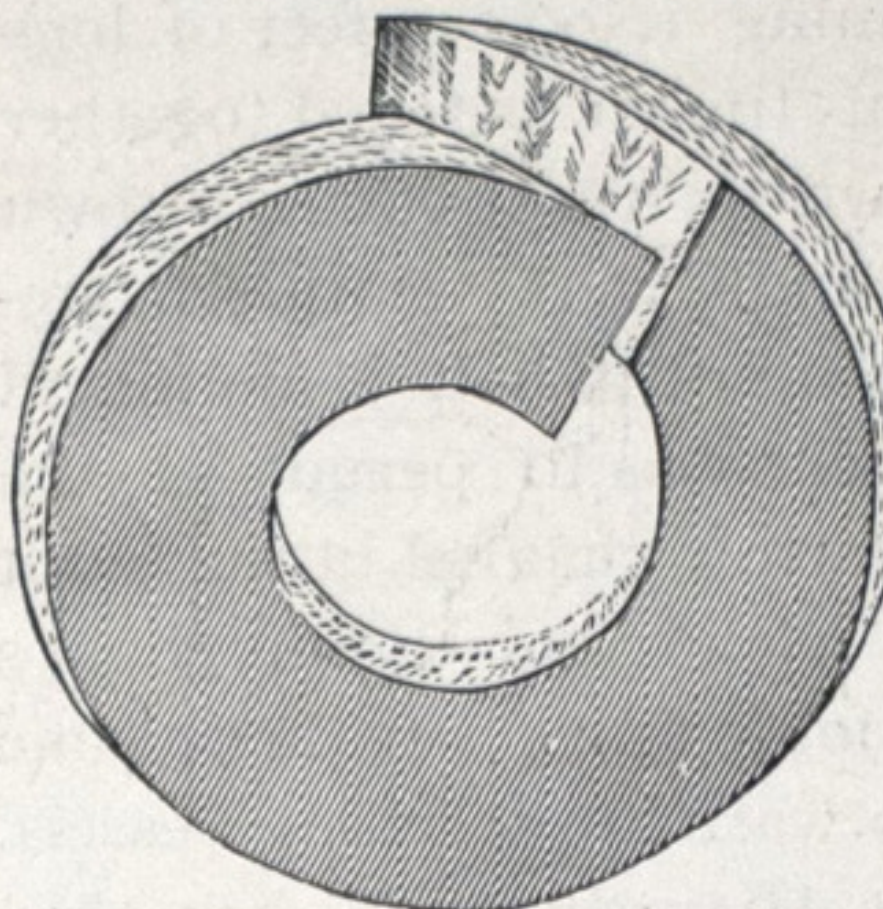
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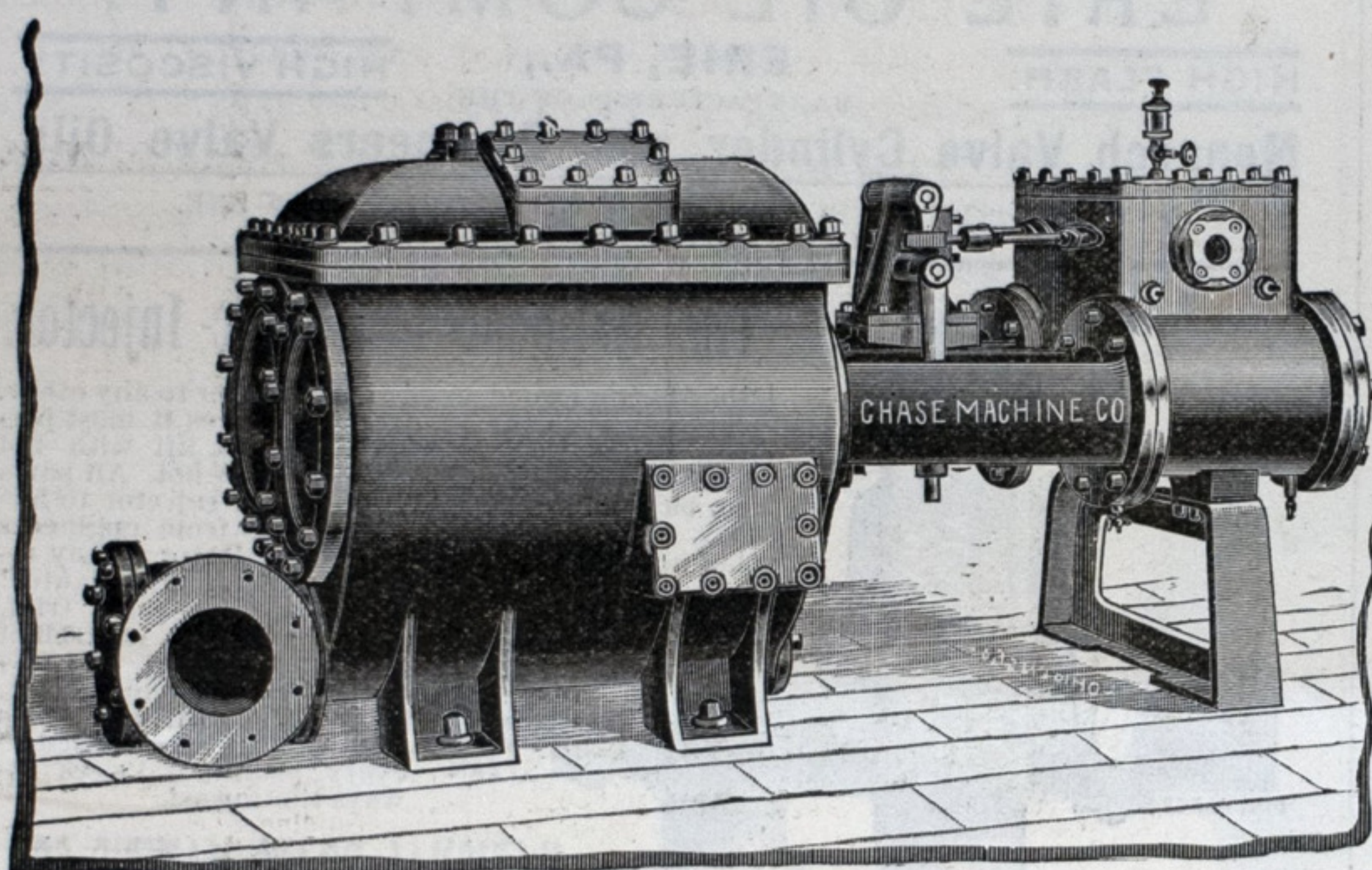
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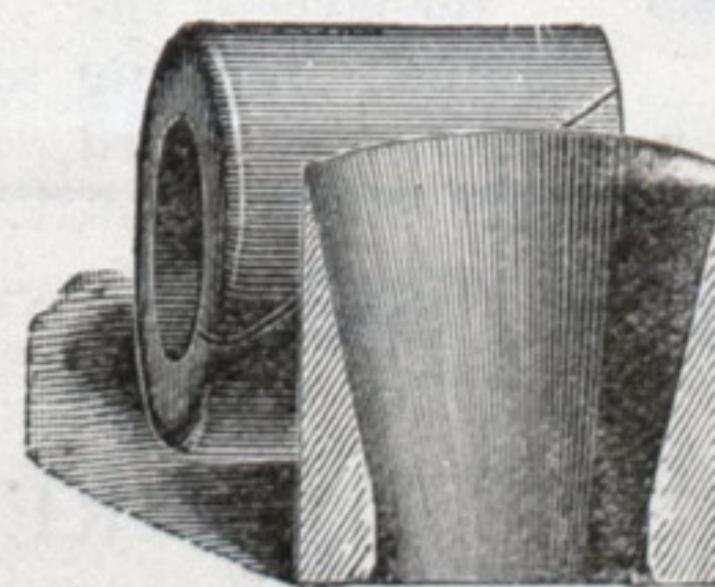
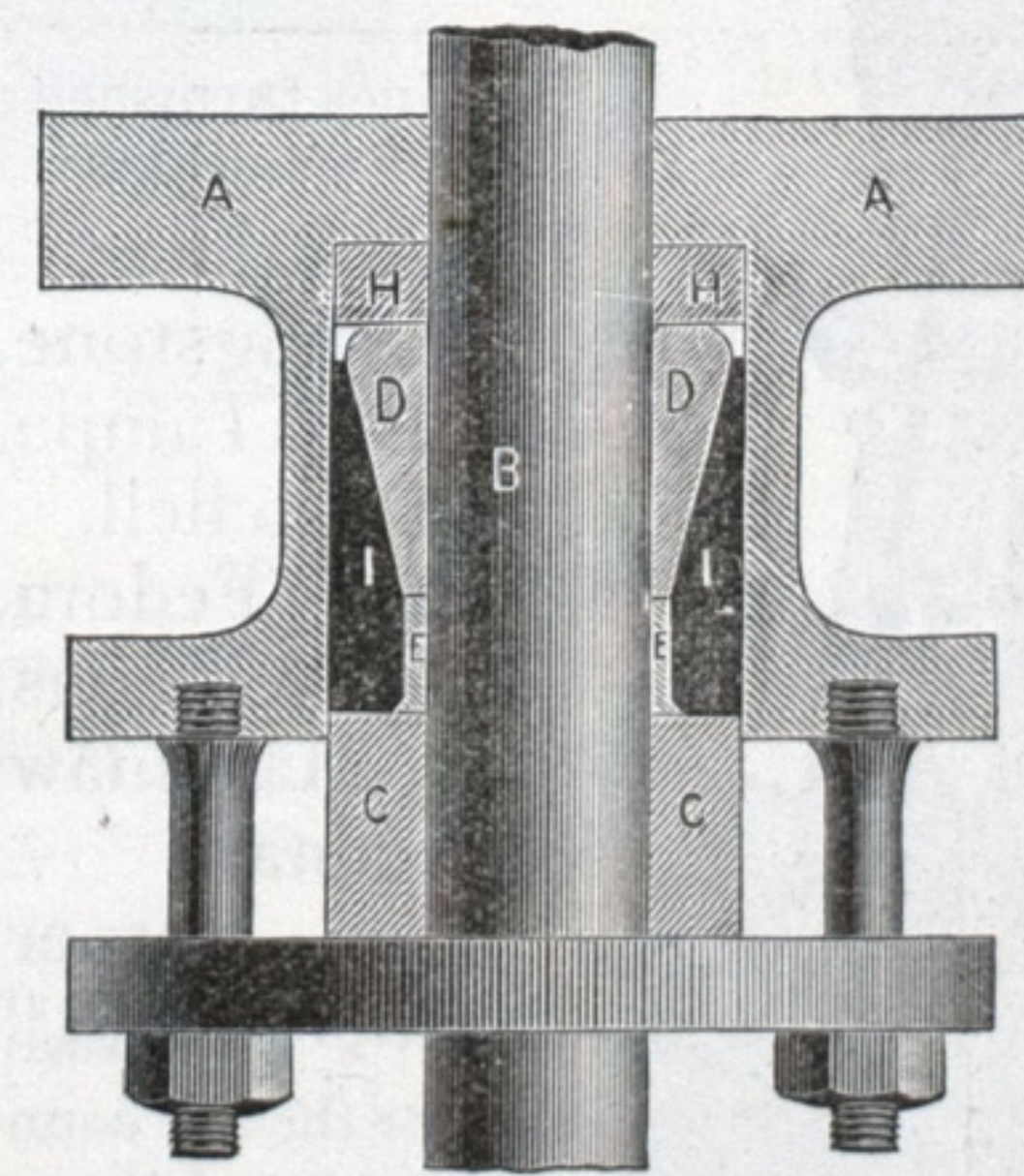
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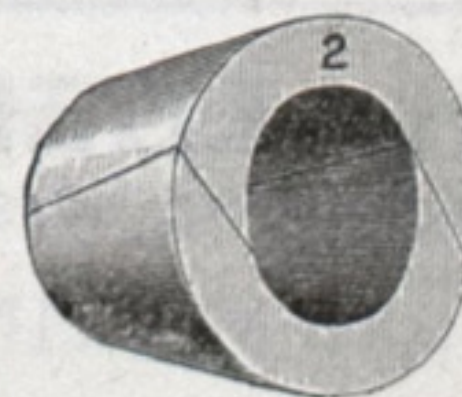
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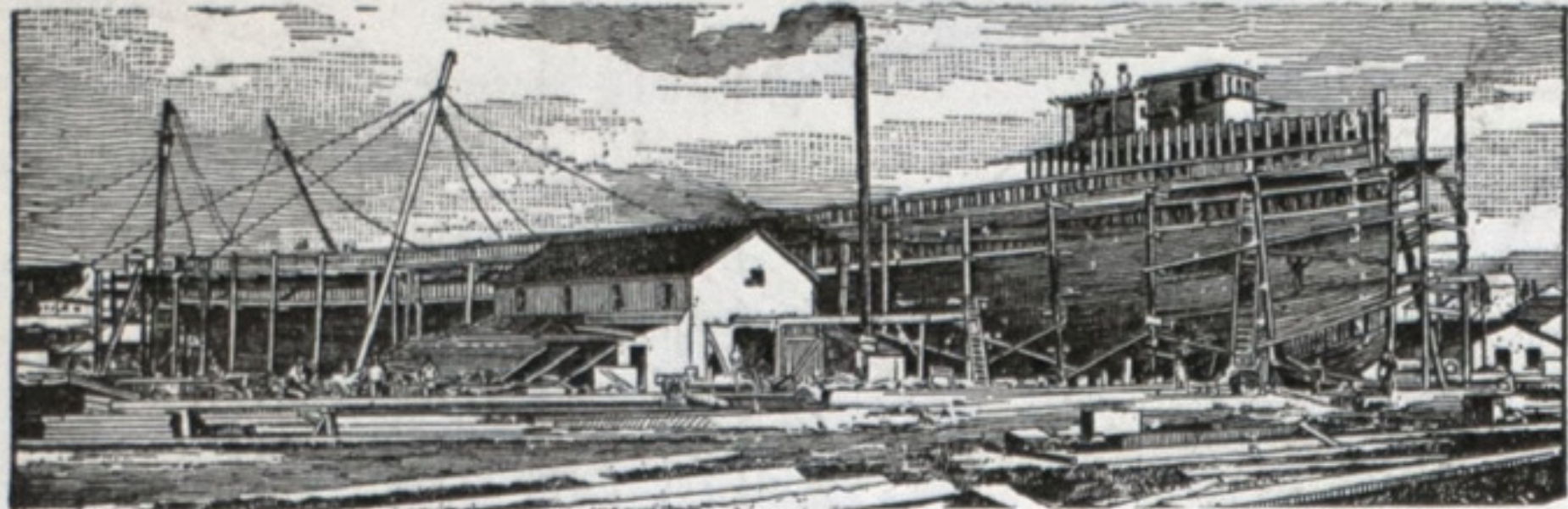
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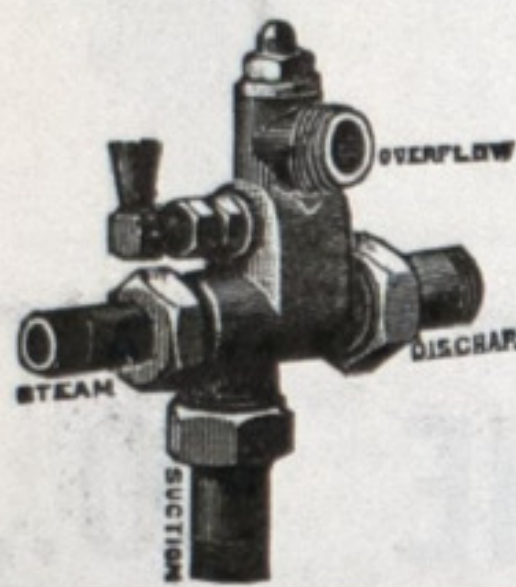
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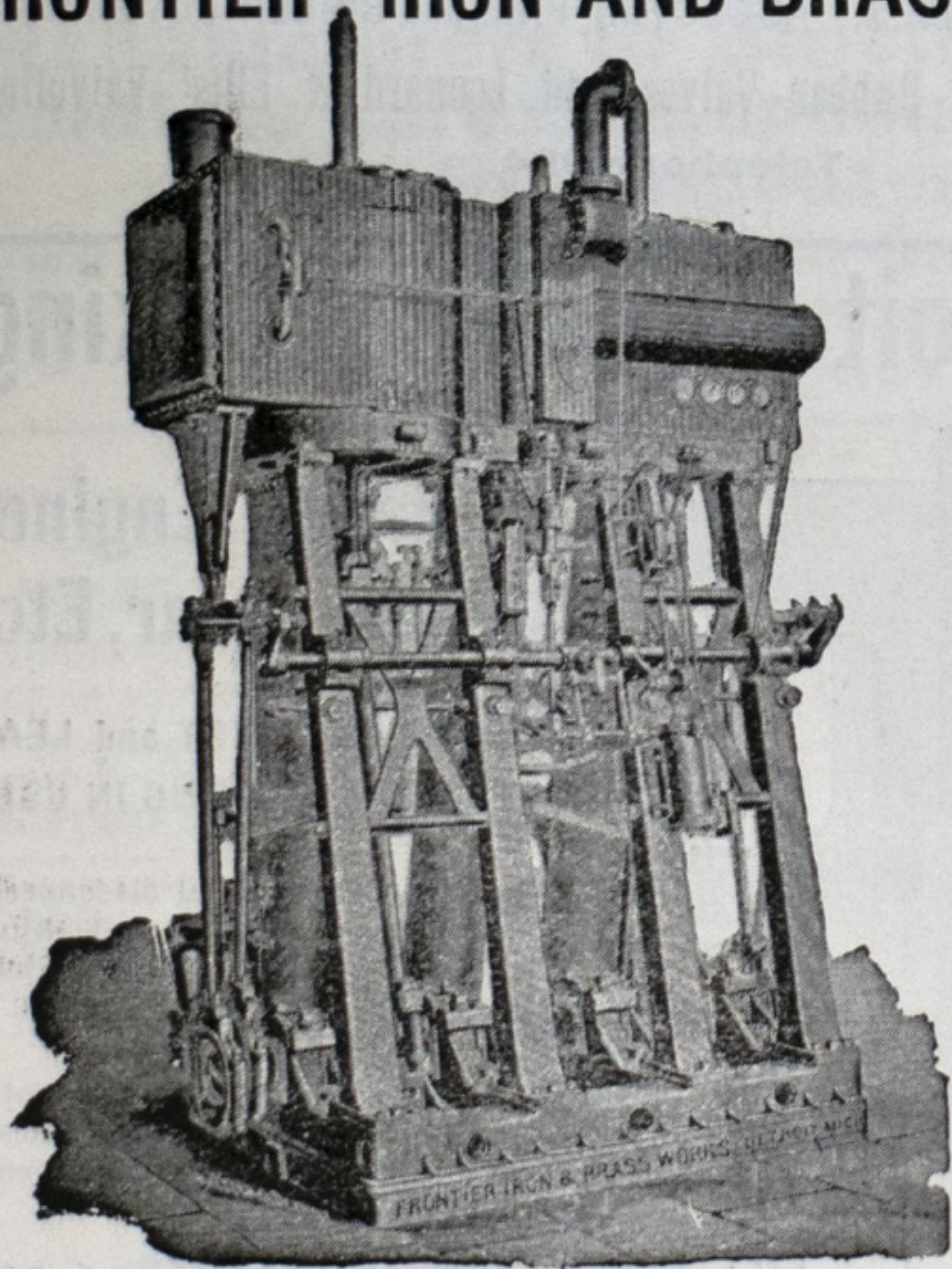
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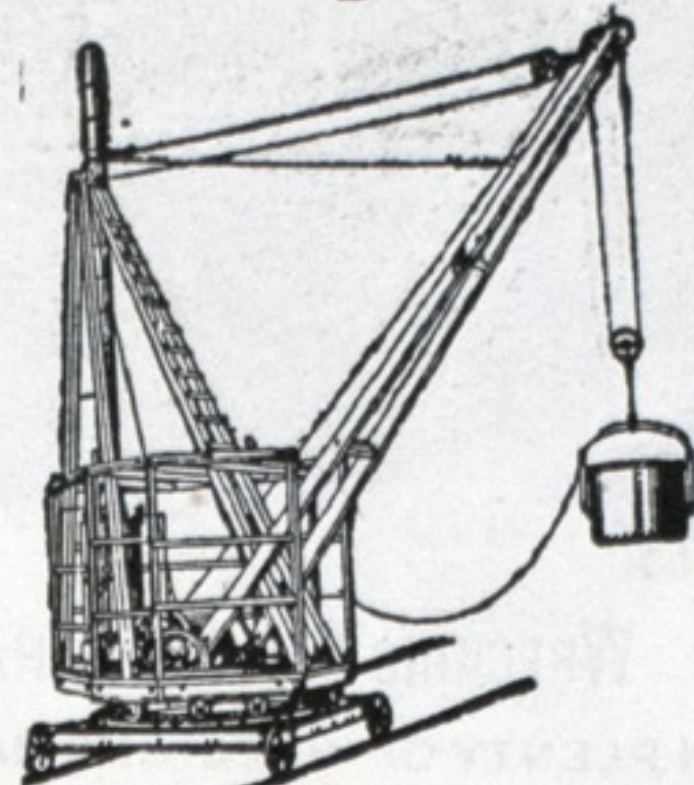
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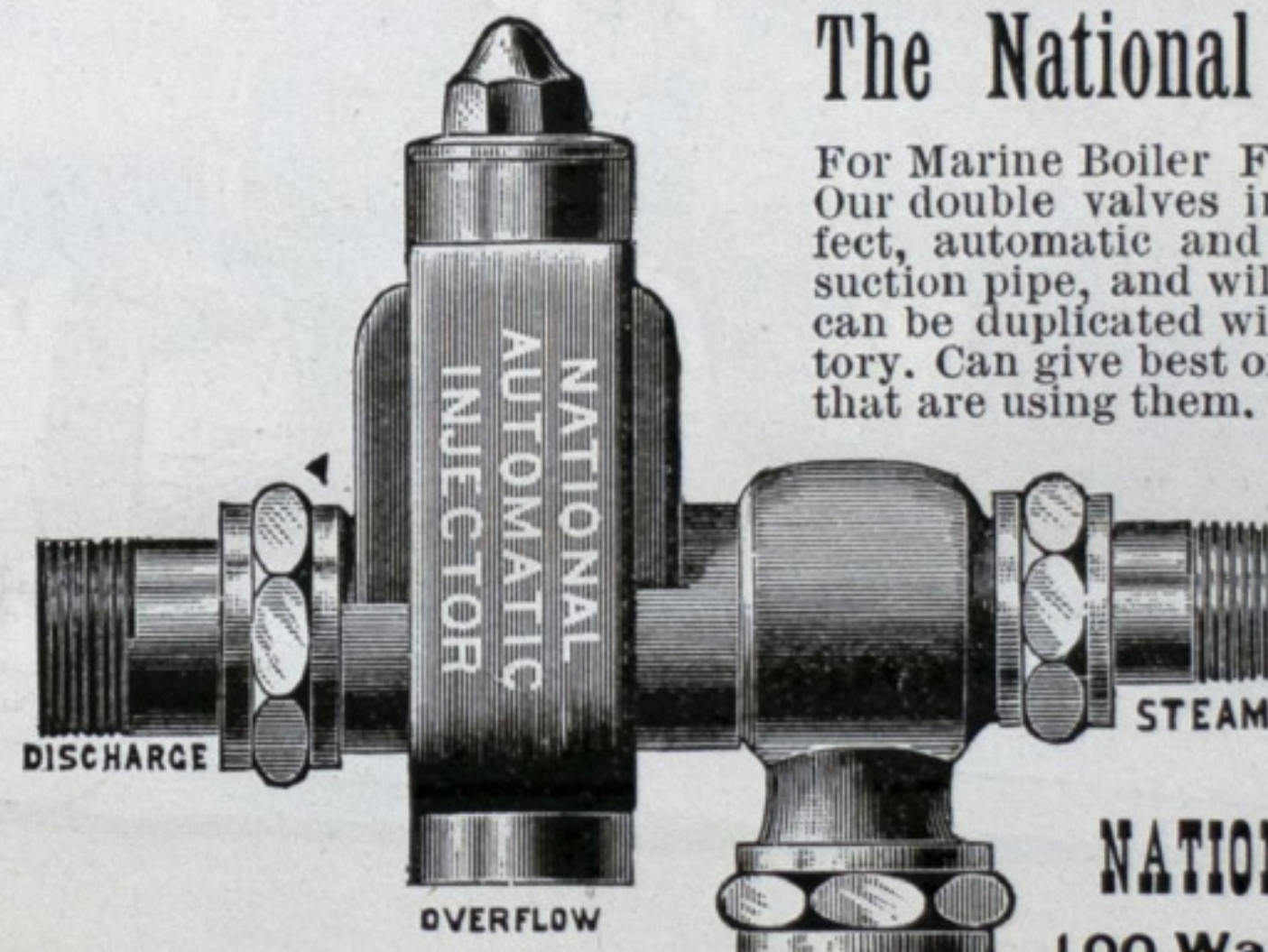
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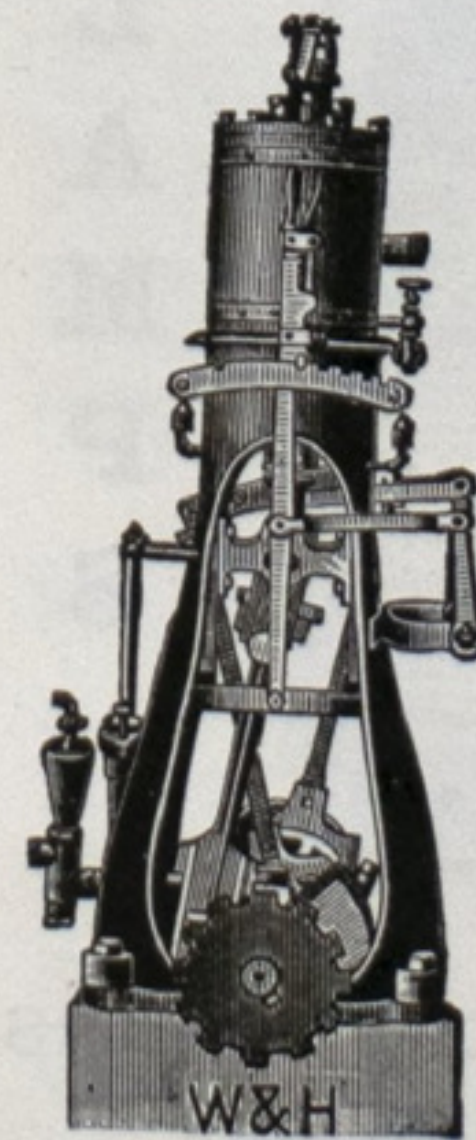
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